Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

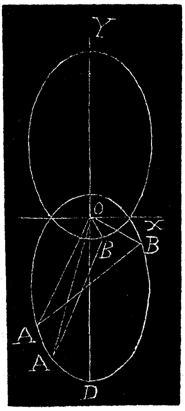
Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Solution by G. B. M. ZERR, A. M., Ph. D., Texarkana, Arkansas-Texas.

Let O be the peg, AB the rod. Let $OB=r$, $AO=r'$, $AB=m$, $\angle XOB=\theta$, $\angle XOA=\phi$.

Now in equilibrium OD always passes through the mid-point of AB.



Then $r+r'=1$ ....(1).

$m^2=r^2+r'^2-2rr'\cos(\phi-\theta)$ ....(2).

$r\cos\theta=r'\cos\phi$ ....(3).

(3) is obtained from the two triangles OAC, OBC.
(1) in (2) and (3) gives

$m^2=r^2+(1-r)^2-2r(l-r)\cos(\phi-\theta)$ ....(4).

$r\cos\theta=(1-r)\cos\phi$ ....(5).

(5) in (4) gives $l^2-m^2+2r^2\sin^2\theta-2rl=2r\sin\theta\sqrt{l^2-2rl+r^2\sin^2\theta}$.

$\therefore\ 4r^2(l^2-m^2\sin^2\theta)-4rl(l^2-m^2)+(l^2-m^2)^2=0.$

$$\therefore\ r=\frac{l^2-m^2}{2(l\pm m\sin\theta)}=\frac{l(1-e^2)}{2(1\pm e\sin\theta)},\ \text{where } e=m/l.$$

This equation represents two equal ellipses with eccentricity$=m/l$, major axis$=l$, minor axis$=\sqrt{l^2-m^2}$, and O is one focus of each ellipse.

[The above solves the problem—"An ellipse confined to one vertical plane is suspended from a fixed point in space, coincident with a movable point on its circumference. Describe the curve marked out by foci." EDITOR].

EDITORIALS.

With January, 1897, the Chicago *Open Court* celebrates its decennial anniversary and now appears in the form of a monthly instead of a weekly.

Plane and Solid Analytical Geometry, by Frederick H. Bailey, A. M., and Frederick S. Woods, Ph. D., Assistant Professors of Mathematics in Massachusetts Institute of Technology, is announced as ready in March by Ginn and Company.

President H. H. Seerley, of the State Normal School of Cedar Falls, Iowa, has just ordered a complete set of the MONTHLY for the library. We only have a few more complete sets. Who wants them ?

We are in correspondence with several excellent mathematicians who are desirous of securing better positions for next year. If any of our readers know of such positions which are vacant or likely to become vacant at the end of this school year, we shall be pleased to refer them to these gentlemen.

With this number begins the fourth volume of the MONTHLY. No pains will be spared on the part of the Editors to make this volume better than any of the three previous ones, and in this effort they earnestly solicit the continued aid of all former contributors and subscribers. This number is sent to all our old subscribers, with bill enclosed, and anyone who may wish to discontinue should return this copy with his name written on the wrapper.

◆

BOOKS AND PERIODICALS.

Elements of Analytical Geometry of Two Dimensions. The Fourteenth Edition. By Briot and Bouquet. Translated and Edited by James Harrington Boyd, Instructor in Mathematics in The University of Chicago. 8vo. Cloth, 582 pages. Introduction Price, $2. Chicago : Werner School Book Co.

This celebrated work so long known to mathematicians familiar with the French language, is now put in English dress, and is, therefore, at the service of American students. Comments on the material and the method of this work are unnecessary.

The work is divided into four books. Book I contains four chapters: Chapter I, Concerning Coördinates; Chapter II, Examples—The Circle, the Ellipse, the Hyperbola, the Parabola, Cissoid of Diocles, etc.; Chapter III, Concerning Homogenity; Chapter IV, Transformation of Coördinates. Book II contains three chapters: Chapter I, Straight Line; Chapter II, the Circle; Chapter III, the Geometrical Loci. Book III contains twelve chapters: Chapter I, Construction of Curves of the Second Degree; Chapter II, Center, Diameter, and Axes of Curves of the Second Degree; Chapter III, Reduction of the Equation of the Second Degree; Chapter IV, the Ellipse; Chapter V, the Hyperbola; Chapter VI, Concerning the Parabola; Chapter VII, Foci and Directrices; Chapter VIII, the Conic Sections; Chapter IX, the Determination of the Conic Sections; Chapter X, Theory of Poles and Polars; Chapter XI, General Properties of Conic Sections; Chapter XII, Secants Common to Two Conics. Book IV contains seven chapters: Chapter I, the Construction of Curves in Rectilinear Coördinates; Chapter II, Convexity and Concavity; Chapter III, Asymptotes; Chapter IV, Construction of Curves in Polar Coördinates; Chapter V, Concerning Similitude; Chapter VI, Graphic Solutions of Equations; Chapter VII, Notions Concerning Unicursal Curves.

From the table of contents it is seen that a leading feature of the work is its scope. It treats all the important methods invented by geometers, and includes some of the most beautiful discoveries of ancient and modern times. All subjects are treated in a practical way and illustrated by the applications of the theories to numerous problems. The book is beautiful as well as profound. The typographical and mechanical execution of the work is a credit to American text-book making. I very heartily commend this work to the careful consideration of teachers of Analytical Geometry and mathematical students desiring a good work on the subject. B. F. F.